

REMARKS

This application has been amended in a manner that is believed to place it in condition for allowance at the time of the next Official Action.

Claims 1, 2, 4-9, 11, 17 and 19-24 are pending in the present application. Claims 1 and 21 have been amended to recite a ferromagnetic metal layer of a CoCrPtB alloy. Support for this amendment may be found in the present specification at page 22, lines 3-10. Claim 12 has been canceled.

In the outstanding Official Action, claim 12 was objected to under 37 CFR 1.75(c) as allegedly being of improper dependent form. However, as noted above, claim 12 has been canceled. Thus, applicants believe that this objection has been rendered moot.

In the outstanding Official Action, claims 1, 2, 4-9, 11, 12, 17 and 19-24 were rejected under 35 USC §102(e) as allegedly being anticipated by or, in the alternative, under 35 USC §103(a) as allegedly obvious over MALHOTRA et al. 6,303,217 in view of IKEDA et al., AKIMOTO et al. 2002/0001736, BERTERO et al. 6,500,567, HOWARD 4,652,499 and TAKAHASHI 5,853,847. Applicants believe the present amendment obviates this rejection.

In imposing the rejection, the Official Action acknowledges that MALHOTRA et al. fail to disclose a magnetic recording medium having a coercive force H_c that is at least

2000(Oe) or an anisotropic magnetic field H_k^{grain} of at least 10,000(Oe). However, the Official Action alleges that the properties would be inherent, if not obvious, in view of IKEDA et al., BERTERO et al. and TAKAHASHI.

The Official Action also contends that the lattice misfit between the metal underlayer in the ferromagnetic metal layer of 0.5% to 2.5% and the claimed axial length ratio in the ferromagnetic metal layer (a/b) are inherently met by MALHOTRA et al. The Official Action contends that the claimed recitations would have been present in the MALHOTRA et al. product since the MALHOTRA et al. product is similar in structure to the claimed invention. In imposing the rejection, the Official Action contends that there is no evidence of record that the cited publication does not inherently possess the claimed recitations. In the alternative, the Official Action contends that the claimed crystalline lattice properties are obvious in view of AKIMOTO et al., BERTERO et al. and HOWARD.

However, applicants believe that all of the publications cited in the Official Action, alone or in combination with each other, fail to anticipate or render obvious the claimed invention.

The Examiner is respectfully reminded that in relying upon a theory of inherency, the Patent Office must provide a basis in fact and/or technical reason to reasonably support the

determination that the allegedly inherent characteristic necessarily flows from the teachings of a publication. Moreover, the fact that a publication may inherently have the characteristics of the claimed product is not sufficient. Rather, inherency must be a necessary result and not merely a possible result. In other words, an observation that one skilled in the art might interpret a publication as teaching a feature of the claimed structure required for anticipation is not sufficient. *In re Oelrich*, 666 F.2d 578, 212 USPQ 323 (CCPA 1981); *Finnigan Corp. v. ITC*, 180 F.3d 1354, 51 USPQ2d 1001 (Fed. Circ. 1999). As noted above, claims 1 and 21 have been amended to recite that the claimed ferromagnetic metal layer is of a CoCrPtB alloy. As MALHOTRA et al. teach a ferromagnetic metal layer with a CoCrTaPt alloy, applicants believe that MALHOTRA et al. fail to anticipate the claimed invention.

The CoCrTaPt alloy described in MALHOTRA et al. and the CoCrPtB alloy described in the present application are quite different. Specifically, they differ in the fourth added element, Ta and B. Their atomic radius differs, and their relationship is expressed as: $(B < Co, Cr < Pt, Ta)$. In other words, B has the smallest atomic radius, and Ta has a larger atomic radius. Therefore, the difference in the alloy material represents not only a difference in material, but a difference that affects the properties of the present invention such as

lattice misfit and axial length ratio (a/b). For example, CoCrPtB provides a greater axial length ratio (a/b).

The Examiner's attention is directed to the specification of the present application at page 6 through page 7, wherein it is exemplified that CoCrTaPt alloy enables one to obtain a high crystalline magnetic anisotropy, but exhibits a small normalized coercive force H_c/H_k^{grain} , resulting in loud medium noises. In order to reduce $4\pi M_s/H_k^{\text{grain}}$ and improve normalized coercive force while at the same time obtaining a magnetic recording medium that is unlikely to be affected by thermal agitation, the application of a high H_k^{grain} (anisotropic magnetic field) magnetic film on the ferromagnetic metal layer is effective. In other words, CoCrTaPt alloy is suitable from the viewpoint of thermal stability but it is an unsuitable magnetic film from the viewpoint of medium noise.

Indeed, when CoCrTaPt alloy and CoCrPtB alloy are compared at present, CoCrPtB alloy can be considered more advantageous for the following reason. In comparison with CoCrTaPt alloy, CoCrPtB alloy has a very small magnetic crystal grain diameter due to the unhindered formation of a Cr segregation structure resulting in the suppression of medium noise. As a result, the S/N ratio can be improved.

Thus, the claimed invention and MALHOTRA et al. are not similar in structure or composition. As a result, applicants

believe that the MALHOTRA et al. publication fails to disclose or suggest the claimed invention. Moreover, applicants believe that the claimed invention is distinct from MALHOTRA et al. in structure and composition. As a result, the Patent Office fails to meet its burden in showing that MALHOTRA et al. anticipates and/or inherently meets each and every recitation of the claimed invention.

Applicants also believe that IKEDA et al., AKIMOTO et al., BERTERO et al., HOWARD and TAKAHASHI all fail to remedy the deficiencies of MALHOTRA et al. Indeed, none of the publications disclose or suggest a magnetic recording medium with the claimed ferromagnetic metal layer as set forth in the claimed invention.

The Examiner's attention is also directed to Figure 6 of the present application, wherein it is shown that the Hc properties deteriorate when the lattice misfit is 0.5% or less. As a result, applicants believe that this illustrates that it is not a matter of merely optimizing this parameter. Thus, applicants respectfully submit that one cannot conclude that the magnetic recording medium of MALHOTRA et al. satisfies or could be optimized in the manner to satisfy the recitations directed to the claimed lattice misfit.

As to the claimed axial length ratio a/b , applicants note that none of the publications disclose or suggest the claimed axial length ratio a/b . The axial length ratio a/b

relates to the lattice distortion of the ferromagnetic metal layer.

As Table 8 and Figure 7 in the present specification show, the lattice misfit or lattice distortion between layered films of 0.5% to 2.5% does not necessarily correlate to a high coercive force H_c , and when the lattice distortion meets the requirements of 1.002 to 1.008, a high coercive force H_c can be obtained. In other words, when both the lattice distortion among the layered films and the lattice distortion of the ferromagnetic metal layer meet in the appropriate range, a high coercive force H_c can be obtained. However, as noted above, none of the cited publications disclose or suggest such a relationship.

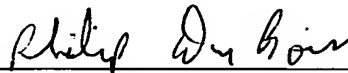
As a result, applicants believe that the publications cited in the pending Official Action, alone or in combination with each other, fail to render obvious the claimed invention.

Thus, in view of the above, applicants believe that the present application is in condition for allowance, with claims 1, 2, 4-9, 11, 17 and 19-24, as presented. Allowance and passage to issue on that basis is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

Respectfully submitted,

YOUNG & THOMPSON



Philip Dubois, Reg. No. 50,696
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

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